



EuroTeX'98 in Saint-Malo, France

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abstract

This year's EuroTeX conference was held in Saint-Malo. On behalf of the NTG Erik Frambach, Hans Hagen, Taco Hoekwater and Siep Kroonenberg represented the Dutch TeX-community. In this report they discuss the social and TeXnical aspects of the conference.

keywords

EuroTeX, conference, Saint-Malo

At the EuroTeX conference, the Netherlands was represented by Erik Frambach, Hans Hagen, Taco Hoekwater and Siep Kroonenberg. There was also a rather large Belgian delegation, consisting of Marc Baert, Gontran Ervynck, Erik van Eynde en Bar van Maele.

The trip to Saint-Malo

We traveled by train via Rotterdam, Brussels and Paris. From Dordrecht on, the party was complete. In 'Bruxelles Midi' we were to change to the Thalys, the new French high-speed train. Assuming that Bruxelles Midi meant Brussels Central, we got off the train there, only to find out that Bruxelles Midi meant Brussels South. This meant that we would miss our connection. Fortunately we could afford to lose one or two hours so we didn't lose hope. However, upon arrival at Brussels South it turned out that it was not possible to simply board the next Thalys. In fact, we had to buy entirely new tickets: our tickets had been valid only for the particular train we originally intended to take. By the time we were in the possession of new tickets, we had missed another train, and the next one would not leave for another two hours. In Paris, we had to travel by subway from Gare du Nord to Gare Mont Parnasse where we needed to buy new tickets once more, and had another lengthy wait.

What happened at the Rennes station

On arrival at Rennes, the station looked deserted. However, there were lots of vending machines for tickets. We all tried

our credit cards on various machines, with little luck, until we finally found a machine which accepted Hans's card. It was a slow business: each ticket had to be purchased separately, and the machine took ten minutes per ticket. At the fourth and last ticket, the machine failed, and Hans didn't get his card back. On the floor above, a window turned out to be open, but it was not easy to explain our plight. 'La machine aux billets a mangé notre carte de crédit' was eventually understood, and the credit card was eventually retrieved from the machine.

In Rennes, we ran into a Norwegian colleague, Dag Langmyr. He had tickets which were probably more expensive than ours, but whose validity was not restricted to one particular train. Meanwhile, it had turned so late that we needed to call our hotels about our delayed arrival. Again, after trying lots of phone boots, none of which would accept either coins or our credit cards. We finally make our phone calls at a snack-bar, where we enjoyed a simple but tasty meal of French bread sandwiches.

Saint-Malo is a seaside resort, but this early in the season it is still quiet enough. The city center is called Intra Muros. Most of it has been destroyed at one time or another, and rebuilt later; according to Taco with some romantic embellishments which weren't in the original plan. The ramparts and the beach were perfect for walks during free hours. But all this we were to discover later.

The courses

On Sunday April 29 EuroTeX participants could attend one of three courses. There was a course called 'Comment débiter avec L^ATeX' by Michèle Jouhet, a course called 'Approfondir L^ATeX' by Éric Picheral, and a course called 'Producing advanced PDF documents with TeX' by Hans Hagen.

We all went to Hans's course, simply because our knowledge of French is insufficient for the other courses, and because it seemed to be more suitable given our current expertise. The other advanced course, by Philip Taylor, had been cancelled at the last moment, so Hans enjoyed the participation of a rather big audience.

Hans showed some impressive things you can do with PDF. His 'ConTeXt' format makes it quite easy (or so it seemed) to produce very complex documents with hyperlinks all over the place, multiple indexes, navigation buttons and other fancy gadgets.



The program

On Monday the conference was officially opened by GUTenberg's president Michel Goossens. He informed us that there were 112 participants from no less than 17 countries. Even people from countries as far as Australia and Japan were present.

The first morning's theme was 'Fonts, maths & encoding'. The first lecture was by the typographer Richard Southall, who explained to us how he designed a telephone-directory using \TeX & Metafont. His challenge was to save ink and paper, so the phone book uses a five-point typeface, which is still surprisingly legible. He also explained the rationale behind the selection and organization of the data.

It was funny to see how Southall designed a font on a grid and next would approximate this design by Metafont code. Naturally a few pixels would be off, but after a few rounds of corrections the typeface would be finished.

Next the Euromath system, a structured editor for mathematicians, was introduced by Janka Chlebíková. That system makes it easier for mathematicians to input their mathematical articles and reports. Unfortunately the system only runs on Sun systems.

M. Clasen and Ulrik Vieth introduced a new 8-bit math font encoding scheme. The desirability of this new math encoding was convincingly demonstrated. Just to mention a couple of idiosyncrasies of the old encoding: the equal-sign = doubles as component for double arrows, and whereas the math italic encoding contains a full set of lower case Greek characters, it only contains a partial set of uppercase Greek characters. Elsewhere in this MAPS issue

you can read more about this subject.

Two other lectures were organized this morning. Sasha Berdnikov presented an encoding paradigm for \LaTeX and the projected X2 encoding which he hopes will replace the abundance of encodings for Russian (Cyrillic) characters now in use. In the final lecture Hirotsugu Kakugawa introduced VFlib, a general programming library that supports multiple font formats.

Parallel to Euro \TeX the RIDT'98 conference was organized in the same building. This provided us with the opportunity to meet John Hobby, the author of MetaPost. A nice surprise which gave some of us a chance to talk about future developments in MetaPost.

After a delicious lunch we were ready for the afternoon sessions. The first part this session was devoted to 'PDF and tools'. Hàn Thê Thành showed us new developments regarding his PDF \TeX program. Sergey Lesenko, the next speaker, showed us another approach for generating PDF: his program DVIPDF is somewhat similar to DVIPS. It takes a DVI file as input and converts it to PDF. Unfortunately, we still haven't seen any executables—it seems that this program might spend the larger portion of it's life as 'alpha software'.

Next, Thomas Esser discussed the concepts of installation, configuration and maintenance of the $\text{te}\TeX$ system. Interesting news from Thomas was that the next version of $\text{te}\TeX$ (0.9) will include the win32 executables as an integral part of the system. Surely this will make the Web2c distribution for win32 both simpler to install and easier to configure.

The next presentation was about Xindy. Roger Kehr held an inspiring talk about this brand new program for generat-

ing indexes. It's suite similar to MakeIndex, but a lot more powerful and flexible. It handles different input encodings and sorting algorithms much better than MakeIndex. It also comes with a couple of tools that hide all of the new extensions behind a traditional MakeIndex interface, so switching to the new program should be no problem at all.

After the tea break we focused on 'TeXnics'. The first lecture was given by Sasha Berdnikow. He discussed some problems with accents in TeX: letters with multiple accents and accents varying for uppercase/lowercase letters.

Next a presentation about fancyvrb was scheduled. This L^AT_EX-package provides an improved version of the traditional verbatim-environment. Sebastian Rahtz demonstrated some of the fancy tricks it can do.

The remaining sessions in this afternoon were mainly of interest to the French members of the audience. Bernard Gaulle talked about the french extension in L^AT_EX, and how one can personalize it and a new French dictionary for ISPELL was presented by Christophe Pythoud.



Figure 1. The celebration cake. Photograph taken by Gyöngyi Bujdosó

After this long day there was a meeting of the members of GUTenberg. In the evening drinks were served because of GUTenberg's 10th anniversary, and a special dinner was prepared. During and after dinner a musical ensemble called the 'Free Donkeys' performed nice folk songs. A few members of GUTenberg and a few others entertained the audience with thoughts and stories about 10 years of GUTenberg. The desert was very special: a birthday cake of one square meter! The atmosphere became even better when we all had a glass of vodka donated by the Russian TeX users group.

After this celebration some of us went to an Irish(!) pub in town, and guess what, after half an hour or so many other TeXies joined the club. As if they could smell where the

fun is. Needless to say that we had a good time, discussing TeX and many other things.

On Tuesday morning we started off with the 'Editorial chain'. Marcia Bossy introduced us to WWW-TED, an evolutionary and dynamic thesaurus for HTML and Marie-Louise Munier gave us some insight in his experience using TeX (L^AT_EX) in the editorial chain.



Figure 2. Photograph taken by Gyöngyi Bujdosó

Petr Sojka described a digitization project that involved creating a PDF version of the Czech Otto encyclopædia, which is a 28-volume monster dating from 1888–1908. The goal was an exact replication of the page layout, including line breaks, and the addition of hypertext features. The digitization process started out with OCR, and markup was added in several, largely automated stages. An impressive project, that once again shows the almost unlimited applicability of TeX.

After the coffee break Robert Sutor showed the possibilities of IBM's Techexplorer as an online publishing tool. Next, B. Bachimont demonstrated 'PolyTeX', but since this lecture was in French we had to skip it and can't tell you what it was about. Even the title of the lecture was incomprehensible to us. The same problem occurred with Jean-Daniel Fekete discussion of something called TEI.

After one more delicious lunch people gathered in 'Birds of a feather' (BOF) sessions. Themes were: L^AT_EX2html, Xindy, and math font encodings/symbols. As usual, the BOFs hardly functioned as expected: The L^AT_EX2html BOF never really started because there was only one participant, the Xindy BOF was more like a 'feature request meeting', and the math fonts BOF went completely out of control (they actually talked for about 6 hours during the BOF, during the following lectures, during dinner and in the pub).

'XML' was the next topic to be discussed. Again, Michel Goossens gave a lecture, this time about XML, the extens-

ible markup language that may well be the successor of HTML, and the future of the web. The final speaker was Murray Maloney who gave us some insight on what is happening in the XML world and what we can expect from it in the (near) future.

Representatives of all BOFs summarized what was discussed in their sessions and which conclusions had been reached. After that, Michel Goossens gave a presentation on publishing scientific documents on the web. He discussed the strategies used by his employer, CERN—the birthplace of the world wide web—for posting scientific papers on the web. They have to process massive amounts from various sources. Manual intervention should therefore be minimized. No single solution worked in all cases; partial solutions involve PDF, various types of conversion from T_EX to html, and on-the-fly HTML generation. Incidentally, the presentation gave a very nice comparison between the various T_EX to HTML converters that are available, showing their weak points as well as their strong points.

Then the conference was officially closed by GUTenberg’s president Michel Goossens. As usual there was an election of the best lecture of the conference. The presentation on Xindy by Roger Kehr was the winner. We think he deserved it.

Food and drinks

With every daily lunch we were treated to a four-course menu consisting of a starter, main course, cheese and dessert, served with both water and two different wines. After the first lunch we understood that the water was absolutely essential to limit the amount of alcohol intake, and also that it was unwise to finish each plate if you wanted to reach the end of the meal. By the way, all of the food was very good.

The social events

You may argue that EuroT_EX by itself is one big social event, but anyway, part of the conference was a guided tour to either the Mont-Saint-Michel or the library of Avranches. Both are quite famous.

Mont-Saint-Michel

The Mont-Saint-Michel is a steep offshore mountain that harbors an old cloister. While driving to the Mont by bus we crossed many picturesque villages. The Mont-Saint-Michel itself was reached by a small road that crosses a long muddy beach that floods at high tide.

The main part of the visit was spend in the cloister, where we were told repeatedly that in fact many cloisters were build upon each other. It’s hard to imagine how such a

large and heavy building was constructed, but the peaceful tiny gardens and silent places from which one could over-see the ocean, probably compensated for the hard labor.



Figure 3. Le Mont-Saint-Michel.

When I compare my french dictionary with the english one, I always thought that the french needed less words than the english to explain things. When however our guide switched to english, she needed about half the time she spent on french, so we probably missed some explanations. Nevertheless, the trip was worth attending.

Avranches

Wednesday mornings are usually rather ordinary mornings, but not on that day. The buses left at 08.00AM sharp (or so we were led to believe), so we had to get up at seven o’clock to make sure that there was enough time to have breakfast and pay our hotel-bills! After a bus trip of about 90 minutes we arrived at Avranches at precisely 10.15AM (yes, this implies that the bus did *not* leave at 08.00AM sharp).



fterwards, it was more than worth the hassle. Not only is the Avranches Library one of the most impressive libraries in the world, but it also has a museum annex workshop attached to it. This gave us the opportunity to look at and compare various kinds of real (newly created) parchments, learn a bit about how the monks lived who did the ‘manu-scripting’, and look at the various kinds of poison that these people considered ‘paint’!



Also, there was a guided tour in the library itself, but unfortunately this was completely in French. Probably this came about because our visit took place during the off-season and they couldn’t find somebody that spoke English. Really a pity, but at least now we have a valid excuse to come back one day. One thing that became very clear looking at the exposition is that the au-

thors of those mediæval manuscripts could have gained a lot from using T_EX: the average paragraph starred ‘Overfull Boxes’ on just about every second line.



Figure 4. The cloister that houses the library of Avranches.

Going home

Taco, Hans and Siep took the train back to Holland on Wednesday, and this time everything went remarkably smoothly. Erik, however, was tempted into another adventure. The Polish delegation had asked him if it were possible to stay overnight at his place, so they could split their journey back home (2000 km by car) in two equal parts. Naturally he said yes and in spite of lots of rain and fog we managed to reach Groningen at 5AM.

Conclusion

Though it was a very packed conference (only three days including the tutorials) it wasn't overfull. The organization was very well done, the accommodation was very good and the enthusiasm of the people attending the conference was high. All in all something to remember.

Expansion, what is that?

Let's start with a very plain T_EX file:

```
Hi there! \end
```

When T_EX reads this one line file, it typesets the words *Hi there!* and then ends the session. Here `\end` is not read as text to be typeset, but as a directive that tells T_EX to do something special. By default, this sequence of characters equals the built in primitive with the meaning *end this session*.

One cannot only call for build in primitives, but also define his or her own macros. So we've got primitives and macros!

```
\def\name{Hans} Hi there \name ! \end
```

Here we define a macro `\name`, that is said to expand into Hans. In most cases, one will use macros for defining more complicated things, but the principles remain the same.

In this small file, after accepting the definition of `\name`, T_EX inserts the two words *Hi there* plus a space. Next it meets `\name` and looks up its meaning. This macro expands into *Hans*, and after typesetting this word, T_EX reads on and sees the exclamation mark. Finally `\end` ends the session.

Here expansion means as much as *insert the meaning of a macro* and when doing so, *expand all macros that are part of this macro*, and so on. Such a macro can contain text or a program, which is a sequence of T_EX primitive operations, macros and/or text. Often those macros influence the typesetting process.

So in fact T_EX is constantly grabbing text and expanding macros. Although there is no sharp border between those activities, one should be aware that T_EX is constantly switching between typesetting text, interpreting character sequences, and executing the programs laid down in macros.

I have to admit that this is not the whole truth. Typesetting is a multi—step process in which T_EX is doing quite a lot. In the previous example T_EX first scans a paragraph, then determines the best line breaks, and finally adds the results to the current page, or in T_EX terms: the main vertical list. Then T_EX looks if and how the content of the current page should be split over more pages. If indeed a full page can be split off, T_EX calls the appropriate macros to complete the page, that is, add a page number, headers and footers, flush floating bodies, add footnotes, do some housekeeping etc. etc.

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