
TUG 2002: A Report from God's Own Country

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For the 63 delegates from 13 countries who gathered at Trivandrum, the capital of the south Indian state of Kerala, for TUG 2002, the ambience of the environs and the deliberations at the sessions only served to reinforce this year's theme: Stand up and be proud of T_EX!

To which, the local hosts, TUGIndia or the Indian T_EX Users Group, had added the teasing rider: After all, you are heading for God's Own Country! That phrase may have seemed like marketing overkill for most T_EXies who had never before heard of Kerala, but the moment they landed in Trivandrum – or Thiruvananthapuram, to give the tongue-twisting name of the city in the local language, Malayalam – most knew that this was some form of paradise. Especially when they first glimpsed the idyllic setting of their place of temporary abode, Hotel Samudra, at Kovalam, a seagull's wing-tip away from the rolling surf of the Arabian sea.

Minds and bodies suitably relaxed after various trans-continental flights, it only remained to see whether the sessions of the 23rd Annual Meeting of TUG would live up to their promise, as advertised in the pre-conference mailers and Web postings. Many of the delegates had battled initial misgivings to travel to India, as several countries had put out negative travel advisories, prompted by the political tensions in the subcontinent. In fact, at one early point in the run-up to the conference, there were strong doubts whether TUG 2002 would actually happen at all.



So it was with more than idle curiosity that the delegates trooped into the airconditioned mini-bus on Wednesday, 4 September for the 30-minute ride from Hotel Samudra to the Park Center, Technopark, the modern, state-of-the-art electronics technology park that was to be the venue for the three-day conference.

But most delegates were too busy taking in (and storing digitally!) the sights of the green countryside they had to traverse, to bother with syntax highlighting and server-side compilation! And when they did land outside the Park Center, where they were joined by the other delegates staying in a city hotel, most of whom had attended the pre-conference tutorials from 1 to 3 September. Were they in for some surprise! Waiting to greet them, all bedecked in a cape with the TUG 2002 logo, was a little elephant! Talk about life imitating art. Who would have imagined the very Indian elephant on top of which Duane Bibby's \TeX lion and METAFONT lioness were happily perched would actually be there in the flesh, gobbling bananas and swaying his trunk in joy?! A couple of intrepid delegates clambered on top of the elephant for a short ride, while most others remained content feeding it bananas and taking snaps.

Also present to welcome the delegates was a team performing the panchavadyam, Kerala's traditional five-instrument musical ensemble, which built up to a crescendo as the delegates entered the Park Center. Appropriately enough, a couple of the foreign male delegates were clad in dhotis, the traditional sarong-like attire of Kerala, while the odd lady did try out a salwar-kameez or a saree!

1. Day One



Suitably localised, the delegates were treated to a brief opening ceremony at a session chaired by Sebastian Rahtz, before Ajit Ranade of ABN-Amro Bank, Mumbai, India talked to them about the status of \TeX in India, where software contributes to 2 per cent of the national Gross Domestic Product. He also pointed out that all 13 of the Indic scripts can be typeset in \TeX , but only 10 of the 5,000 fonts are free. That set the tone for the next presentation by S. Rajkumar of Linuxense Information Systems, Trivandrum,

India, who talked about the processing of Unicode text to produce high-quality typeset material for Indic scripts using Opentype fonts.

Continuing the focus on the Indian subcontinent, Amitabh Trehan of the Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya, Delhi, India, narrated the experiences of his team in typesetting in Hindi, Sanskrit and Persian. They had recently published the first Indian-language book totally typeset in \LaTeX , using the devnag package, later, also incorporating the sanskrit and Arab \TeX packages.

In her paper, Gyöngyi Bujdosó of the University of Debrecen, Hungary, dealt with how the Hungarian \TeX Users Group (Ma \TeX) has resumed the localization of \LaTeX for the Hungarian language, keeping in mind the specialities of Hungarian grammar, like hyphenation, and handling definite articles and suffixes. By the time Gyongyi had got to plans for designing special Hungarian ligatures and new fonts, everyone had built up a reasonably good appetite!

Thankfully for the organizers, the first lunch of TUG 2002 proved to be a hit, with most of the delegates preferring to polish off the local Indian dishes, and giving the continental offerings a wide berth! There weren't too many complaints about levels of spice either, normally the scarier side of Indian cuisine for the average foreign visitor.

The post-lunch session was kicked off by Satish Babu, Chair of the TUG 2002 Organizing Committee who, while admitting that he was preaching to the converted, nevertheless went on to give an Indian perspective of the free software model, and how a poor country like India can use it as a key enabler in the development process.

In his talk on "The Tao of Fonts", Wlodzimierz Bzyl of the University of Gdansk, Poland, searched through Yin and Yang symbols and I Ching hexagrams for answers to such questions as: Why are there so many variations of letter-like shapes? How were these achieved? And what are the other ways of getting them?

In the last talk of the day, Roozbeh Pournader of the Sharif University of Technology, Tehran, Iran set his sights on "Unicode, the Moving Target". He stressed the recently introduced features of Unicode, now over a decade in development, and pointed out how the T_EX community has remained largely ignorant of the moving target, preferring to stick to its own special formats and traditions. He also specified new requirements for the Omega typesetting system, to make it usable for standard renderings, which, predictably enough, drew some sharp observations from John Plaice of the University of New South Wales, Australia, and primary author of the Omega (and now, Omega 2) project, billed as the successor of T_EX.

In fact, all the lectures were followed by brief Q&A sessions, which often had to spill over to the lunch and tea breaks. Needless to add, these bouts helped renew several old passions, while igniting many more new ones!

Back at the Hotel Samudra, Kaveh Bazargan of Focal Image Ltd., UK, and Member of the TUG 2002 Organizing Committee, had arranged for a live demo of *kalari payattu*, the traditional Kerala martial arts form, on the lawns of the hotel, just before dinner. Introducing the show, Dominik Wujastyk of University College, London, explained some of the salient aspects of the art form and its significance to the development of other Asian forms like karate and kung fu.

2. Day Two

Thursday, 5 September managed to squeeze in one more speaker to the day's list, taking it up to a total of eight lectures. The day began with an invited keynote talk by Hans Hagen of Pragma, Netherlands, who illustrated the fact that T_EX can meet many of the demands of modern publish-



ing, especially thanks to the tight integration of the ConT_EXt macro package with METAPOST. With ConT_EXt becoming XML-aware, users can now comfortably mix XML and T_EX techniques, he pointed out.

David Kastrup of Bochum, Germany, in his lecture, revisited WYSIWYG paradigms for authoring L^AT_EX, highlighting input manipulation tools, including editors like T_EXMACS and LyX, and page-oriented previews like Whizzy-T_EX and Instant Preview. Kastrup's own preview-latex package offers better coupling by placing previews of small elements into the source buffer.

In the third talk of the day, Ross Moore of Macquaire University, Sydney, Australia, elaborated on how serendiPDF makes it easier to find the correct way to express complicated mathematics, especially aligned environments, using L^AT_EX. The existence of extra (initially hidden) mathematical fields within PDF documents helps solve the problem of how to search for pieces of mathematics within typeset documents, he said.

Just before lunch, Stephen M. Watt of the University of Western Ontario, Canada, lectured on conserving implicit mathematical semantics in conversion between T_EX and MathML. Several efforts have been made to design software to convert mathematical expressions from T_EX to MathML and vice versa. Unlike the standard approach of expanding macros and then translating from low-level T_EX to MathML, Watt's approach is to map macros in one setting to corresponding macros in another, thus conserving implied semantics.

After lunch, Karel Píška of the Academy of Sciences, Prague, Czech Republic, presented his paper on converting public Indic fonts from METAFONT into PostScript Type 1 format with the T_EXtrace program developed by Peter Szabo in 2001. For TUG 2002, Píška prepared a collection of PostScript Type 1 Indic fonts corresponding to their METAFONT sources from CTAN.

In a joint presentation on FarsiT_EX and the Iranian community, Behdad Esfahbod and Roozbeh Pournader of the Sharif University of Technology, Tehran, Iran, dwelt on the history, technicalities and future of FarsiT_EX, the bilingual Persian/English localized version of L^AT_EX that meets the minimum requirements of Persian mathematical and technical typography. The FarsiT_EX project team is working on a new release with PostScript Type 1 fonts, as well as including Unicode support and integration with Omega, Esfahbod and Pournader said.

Denis Roegel of LORIA, France, presented a paper on the METAOBJ system and its features for the implementation of very high-level objects within METAPOST. He first dealt with the usual low-level way of drawing within METAPOST, and then described a functional approach to drawing and how objects can be implemented.

In the last lecture of the day, Karel Skoupy proposed a new typesetting language and system architecture to overcome the oversimplified type system of T_EX and the incomplete set of T_EX primitives. Skoupy's future typesetting system will be composed of flexible components that can support multiple inputs (T_EX, XML) and output formats (DVI, PostScript, PDF) and different font types.

The second day of TUG 2002 ended with the official – and sumptuous – conference dinner at Hotel Samudra, which was preceded by a song-and-dance show by a group of homeless children from the Sri Chitra Home for the Poor and Destitute, Trivandrum, as well as a flute recital of classical Carnatic music by VC George. Both these offerings were greatly enjoyed by the delegates, many of whom posed alongside the performers for souvenir photographs.

Many also lingered on long after the performances and dinner, to savour the cool breeze from the sea, late into the night, emboldened by the fact that the next day, Friday, would be a relatively easygoing day, with no official sessions scheduled. This was made necessary by an earlier call by local trade unions for a day-long general strike that would have prevented vehicular traffic on the streets of Trivandrum, which would have made it almost impossible for delegates to reach

Technopark. The organizers therefore rescheduled the programme to allow for some tutorials for delegates at Hotel Samudra itself. In the event, though the strike was called off at the last minute, the delegates spent the Friday well, some attending David Kastrup's tutorial, and others setting out for sightseeing and shopping!

3. Day Three

Saturday, 7 September began with none of the laziness of a typical weekend, as the TUG Business Session reviewed the past year's annual report, discussed some points of budgets and finances, and the forthcoming elections to various official posts.

After that, the first lecture of the day was by G Nagarjuna of the Tata Institute of Fundamental Research, Mumbai, who talked on semantic Web, the GNEWSYS project and online publishing.



The theme of online communication was also a key point in the next presentation by Sri-vathsan, Director of the Indian Institute of Information Technology and Management - Kerala (IIITM-K), who talked of using free software in the nationwide education grid that his institute is now working on.

A Chinese touch followed, with a presentation by the founder and Chairman of the Chinese T_EX Users Group, Hong Feng, who attempted to marry T_EX with Lojban, an artificial, ambiguity-free language constructed in 1955. Feng pointed out how it is possible to encode Chinese by using Lojban as the meta-language and by importing the idea of re-encoding Chinese in variable length strings of human-readable ASCII codes.

In a brief but interesting presentation just before lunch, K. Anilkumar of Linuxsense Information Systems, Trivandrum, India, presented a way of exploiting shell-escape to make T_EX read databases and generate reports.

In the first lecture after lunch, John Plaice of the University of New South Wales, Australia presented a paper written along with Yannis Haralambous of the Ecole Nationale Supérieure des Telecommunications de Bretagne, France. They presented tools, based on the Omega typesetting system and using fonts from devnag, for typesetting languages using the Devanagiri script (Hindi, Sanskrit, Marathi). These tools can be adapted to particular environments of input methods and fonts, and even to other Indic languages, the paper argued.

Fabrice Popineau of SUPELEC, France, talked of what's new with the 7th version of T_EXLive under Windows. He also told delegates of an imminent project, funded by the French Ministry of Education, to tightly integrate XEmacs and T_EX to provide an easy-to-use, out-of-the-box word processing tool.

In the last lecture of TUG 2002, Karel Skoupy discussed the development of a T_EX file server, which will offer cross-network transparency and resource sharing. He demonstrated the prototype of the server, and its protocol and integration with kpathsea.

Before the closing ceremony of TUG 2002, delegates were treated to a video display that showcased the attractions of Big Island, Hawai'i, the venue of TUG 2003, the Silver Anniversary of T_EX.

At the closing ceremony, Satish Babu thanked all those who had worked tirelessly to make the conference a success. Dominik Wujastyk summed up the achievements of TUG 2002, noting, in particular, how potential disruptions had been managed in a quiet, unobtrusive and peaceful manner.

As TUG 2002 came to a close, and delegates began exchanging hugs and goodbyes (or “Alohas”, which is Hawai'ian for both “goodbye” and “hello”), all eyes were trained on the Outrigger Waikola Beach Resort, Big Island, Hawai'i, where, from July 20 to 24, T_EXies will congregate to celebrate 25 years of T_EX.

See you in Hawai'i!

Key Players of TUG 2002



Satish Babu
Chair, Organizing Committee



Sebastian Rahtz
Chair, Programs Committee



Kaja Christiansen
Proceedings Editor