

# BEK To The Future: píksel04

United under a Free Software banner, a motley crew of audiovisual artists and developers gathered in Norway this November for an intense week of discussion, workshops and performances. Martin Howse reports back from the frontline

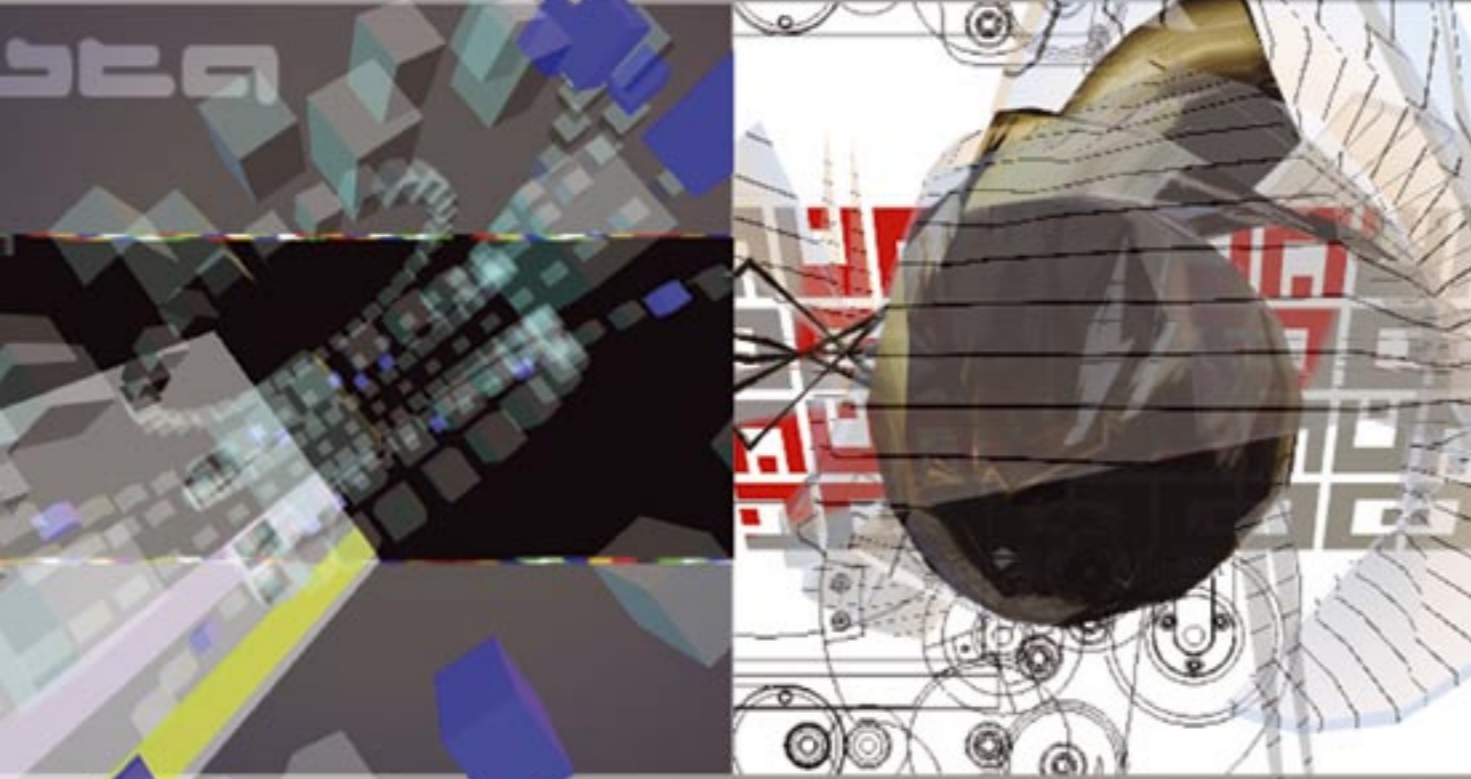
**N**estling between fjord and mountains, Bergen, a small, friendly town which attracts more than its fair share of Norwegian rainfall, makes for an unlikely meeting ground for international artist-coders. Perhaps thanks to the damp climate, the warm environment of BEK (Bergen Centre for Electronic Art) has proved fertile enough to spawn a second, much enlarged iteration of the excellent Píksel event, uniting Free Software-centred developers and artists in defining and sharing common interests. And few could argue with the global nature of this event, with representatives of more than 13 nationalities crowded into the small offices of BEK to take part in the week long code-fest that is píksel04.

The size of this unique event, which now functions as an essential get-together and brainstorming session for artists and developers involved in free software on all platforms, is good testimony to the popularity of such approaches for audio, and primarily video work. Subtitled FLOSS (Free Libre and Open Source Software) in motion, píksel04 has most definitely snowballed from last year's more modest gathering which was more about a close grouping of a small number of video developers pursuing a common set of concerns around interoperability. Sure such issues were

very much to the fore this time round, with a core team of developers such as Jaromil and Tom Schouten hunkering down to thrash out the internals of the LIVIDO (Linux Video Dynamic Objects) plugin framework, but with three times as many coders and artists in residence in the tight intimacy of BEK, píksel04 presented more diverse, ad-hoc groupings. Intimate, tightly knit clusters would form for temporary discussion at all hours around such issues such as streaming solutions, with Ogg Theora very much in favour, geek toys, and the vagaries of laptop manufacturer's repair deals. Window managers were compared, drivers tweaked and kernels recompiled. Within the hothouse atmosphere of BEK, nearly every project, including the highly usable Dyne:bolic distro, saw a new release, with programmers hammering out code for the full roster of open source artistic apps, from the venerable Pd (Pure Data), PDP (Pure Data Packet) and SuperCollider to GePhex and the extravagantly named Gullibloom. The need for speed was very much an issue, with coders swapping tricks, tips and elegant maths. Heated discussions in German, Spanish, Dutch, English and Norwegian filled the small spaces of BEK and C, C++, Lisp, Scheme and Forth all rubbed shoulders in this warm code sauna.

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Of course, a more formal structure was laid out for the week's activities, with daytime public and closed workshops based around major packages such as Pd and GEM, or the LiVEs NLE (Non Linear Editing) and VJ tool. Evenings were reserved for artists to showcase their work in performance or presentation within the suitably modernist setting of Landmark, a prestigious local venue within the Kunsthall. However, in common with the free software development model such a structure was very much open to mutual change and improvisation, serving to some extent as pegs on which more informal coding and discussion could be hung. In short, piksel04 was more about mutual inspiration amongst developer-coders, rather than a structured public event. Aside from the hefty schedule of presentations, most artists and developers were happy to show both work and coded underpinnings as larger groups of intrigued parties would group around their busy laptops, peering eagerly over onlookers' shoulders.

### TOO MANY COOKS?

Such a large, diverse grouping of artists and developers does raise its own issues, with so many varying artistic and conceptual approaches to

technology which often seem at loggerheads with one another. Another worry is that smaller apps, which address specific artistic concerns, have a tougher life within an ecosystem dominated by major players such as Pd and SuperCollider. Questions of interpretation and artistic cohesion are also often dangerously overlooked in favour of more technical or political concerns, and in some instances issues of quality become flattened or ignored. Is it enough to unite artist-coders under a collective, Free Software banner, if they have little else in common, or should an event such as piksel04 moderate and define this commonality for the public? Can a shared purpose be teased out of such diverse threads whilst still maintaining difference and a sense of artistic originality? Sharing a code base is obviously a good thing, and to some extent apps such as Freej and Veejay represented at piksel04 fit the bill, but this much enlarged event also saw refreshing new approaches to 3D work, with the intriguing Fijuu project based around the Nebula free software game engine, and Gullibloom, incorporating an advanced OpenGL-based graphics server. Indeed, it is possible to rather artificially divide the groups within piksel04 along the 2D, 3D axis and useful aesthetic comparisons can be made between these differing approaches to visual data with the

work of Jaromil and Kentaro Fukuchi definitely emphasising an old school flavour. Indeed, piksel04 is still very much in touch with its roots, with the founders of what could be termed the open source artistic scene sitting comfortably alongside younger coders and new philosophies.

And many coders are well aware of this history, as evidenced by an interesting discussion about the Demoscene following Monday night's presentation from Antti Silvast of Pseudotoad fame. Antii was a major player in the Demoscene in the early 90s, and he eloquently described how, with the death of the Demoscene and the rise of the PC, a few coders made the shift to open source. To some extent the free software VJ scene does share with the Demoscene a similar eye candy aesthetic and obvious concern for speed and efficiency. However, Demoscene coders always kept their cards well hidden, and could easily be likened to rather miserly magicians, hoarding their best tricks and secrets. Open source coding for visuals is, of course, equally, if not more, competitive. Openness makes poor code evident and shared results create an expectation of even faster development.

### RICH MIX

Piksel04 is tough to pin down, with performances and presentations embracing embedded solar

powered devices, live wireless video processing, EEG monitoring, GPS data use for installations in Iceland, and lively PlayStation interfaces. Defining the event as a Free Software meeting gives little idea of this sheer diversity. Yet if you were to attempt to tease out a thematic concern for piksel04, then surely the concept of networking readily fits the bill in both its technical and social sense. It's all about sociability of course, with coders eating, drinking and talking together in a charged yet playful working environment. Of course it's obvious but still worth stressing that hackers still have yet to devise an Internet enabled over-the-shoulder protocol for informal discussion, bouncing around of ideas and mutual inspiration. Free software coders simply have to meet.

Networking also implies interoperability, a concern which powerfully fuelled the first Piksel meet last year. Piksel04 picked up the interoperability challenge, with hardcore coders such as Niels Elburg and Salsaman seeking to push forward the LiViDO common plugin architecture, through serious discussion and hefty code sprints. During the week the piksel-dev list, reserved for work on LiViDO, reached melting point with heated exchanges over API and implementation. Andraz Tori, lone developer of NLE Cineleerra fame, took great delight in fanning the flames, but important questions were raised nonetheless as to whether a common API could exist between both real-time apps and NLEs. Indeed, the rise in use of the highly flexible OSC (OpenSoundControl) protocol amongst all manner of artistic apps at piksel04, and sheer usability of Pd as overarching framework, demonstrated admirably by James Tittle II in his GEM workshop, does raise several questions over the necessity for such a plugin architecture. Lightweight OSC does seem the way to go, in keeping with the pluggable Unix philosophy, and artist Daniel Fisher put both Pd and OSC to good effect on the closing night of piksel04, with the much hyped interoperability gangbang.

Prior to this finale, the Gullibloom crew admirably demonstrated networking as display, with a virtuosic set, again using OSC in this case



teamed with their own, highly powerful software suite with GsrV2, an OSC message hub, at the core. Self coded network traffic information collectors and sniffers threw data to clients through this hub, and both Pd and SuperCollider patches alongside a purpose built graphics engine translated these streams into an impressive storm of 3D shapes, images and rhythmic noise.

### SOCIAL NETWORKS

Streaming, which could also be well defined as networking for social connectivity, was very much on the agenda this year, both in terms of providing access to those outside Bergen and within presented apps themselves. Distribution is a key issue which is often overlooked on the artistic scene in favour of content production. Prior to the start of piksel04 proper, Adam Hyde from r a d i o q u a l i a delivered a three day open streaming workshop which well covered basic concepts of delivery, audio setup, GNU/Linux use and finally fully featured streaming software such as MuSE for the absolute beginner. With the arrival of artist coders over the weekend, the heat was most definitely on as geeks battled to throw down the first free streams using spanking new technologies such as Flumotion from Fluendo (see review issue 44). Within just a few days Free Software-based audio and video streams had been set up from machines scattered across the floors and rooms of BEK, from ad-hoc wireless laptops, and from Landmark itself all day and every night. URLs were shouted across workrooms and MPlayer switches traded madly.

Streaming as a tool for communities was very much the order of the day, and an excellent presentation midweek from Tatiana de la O and Lluís Gomez i Bigorda demonstrated a beautiful model of interfaces for social connectivity. Their web-based Gollum app throws together audio and video mixing, streaming, chat and a map-based interface, allowing for a good level of integrated multi-user communication. Gollum is all about levelling the playing field, when it comes down to media access. Audioflow and Videoflow, presented on the closing night of piksel04 by

Rama, are also built on a Pd base, and again present a highly usable platform for free and open global communication. And thanks to August Black's Userradio project, a set of tools for collaborative networked audio production, piksel04 participants were able to contribute to a radio performance streaming and mixing across connected locations in USA, Holland, Austria and Norway during the night of the US elections.

Piksel04 stressed the importance of networking across the board, though perhaps questions of public interface did arise, with developers outnumbering public for most events. That said, such a rich mix of projects and personalities provided plenty of food for thought which artists will surely bring back to their own, more local communities and publics. Artists such as Federico Bonelli, from SUB multimedia, with a nod to the Futurists, and Yves Degoyon with his punk "rm -rf /" performance demonstrated an awareness of a history in which the Free Software artistic movement, though hard to define, will surely play an important role, with artists working under proprietary models considered more as an unfortunate aside.



## Key Links

### Piksel04

[www.piksel.no/piksel04](http://www.piksel.no/piksel04)

### BEK

[www.bek.no](http://www.bek.no)

### PDP

[zwizwa.fartit.com/pd/pdp](http://zwizwa.fartit.com/pd/pdp)

### GEM

[gem.iem.at](http://gem.iem.at)

### Pd

[puredata.info](http://puredata.info)

### LIVES

[www.xs4all.nl/~salsaman/lives](http://www.xs4all.nl/~salsaman/lives)

### Gullibloom

[gullibloom.org](http://gullibloom.org)

### Gollum

[gollum.artefacte.org](http://gollum.artefacte.org)

### Fijuu

[fijuu.com](http://fijuu.com)

### Userradio

[aug.ment.org/userradio](http://aug.ment.org/userradio)