

Turbocharging maps and documents

EVERY PC user knows how slow the machine can be when you want to load and manipulate large graphics files such as maps – but at November's AGI2005 show, an Oslo-based company called Rasterimaging demonstrated a graphics display technology which can present gigabyte-sized maps at lightning speeds.

Demonstrating his software on a laptop PC, Dr Sandor Seres opened a 10-layer nautical map containing 400 megabytes of image data in colour, measuring 23617x16386 pixels overall. The map appeared in an instant, and Dr Seres showed how he could zoom and pan the displayed area freely, with no apparent lag. "Seeing is believing", he said, as he dragged the map first

one way and then another. "I can't move it so quickly that it's not followed." Scrolling was perfectly smooth.

The key to this speed, Dr Seres explained, is a novel technique which decompresses the map data on the fly. "This is not pixel-based compression", he emphasized. "The notion of bitmaps doesn't exist, and that is why it is so quick. It is lossless compression.

"There is no bitmap in memory. Everything is pumped out from a compressed representation. All the time I am throwing the old data away and pumping out new information from the compressed version. All functions are directly based on the compressed format."

The PC version of the software amounts to about 500

kilobytes of code, and it can handle other types of image data too. Dr Seres demonstrated a 30-page technical manual which could be zoomed and scrolled in the same way. A separate window displayed thumbnail images of each page for easy navigation. "It can be in catalogues, in search



With Rasterimaging's compression technology, this 5200x3400 pixel multi-layer contour map could be scrolled and zoomed instantly, despite the limited processing power of the PocketPC device. The company plans to license its on-the-fly data compression technology to developers who supply on-screen mapping and other types of vector or bitmap image display

engines, anywhere where you need a quick overview of documents", he said.

Another feature of the technology is a smooth-edge anti-aliasing function, which allows text to be rotated to any angle without breaking up into jagged edges. Parameters can be added to italicize, embolden and stretch the text. The process can also be applied to

vector graphic images as well as bit maps.

Desktop or portable

Being independent of operating system, the technique is not limited to desktop machines. Dr Seres also showed it working on a compact PDA, using a UK coastal chart with 20 layers of mapping data measuring 5200x3400 pixels. Again, the map scrolled instantly and perfectly smoothly. And to dispel any suspicion that this relied on some special magic in the latest hardware, he showed that it worked just as well on a three-year-old IPAQ.

Dr Seres says this work began as a 'garage' project, but in the past two years he has concentrated on developing it towards product form. Now Rasterimaging is ready to license it to companies which produce mapping and other display software.

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Making light work of huge graphics files: Dr Sandor Seres of Rasterimaging

